



# Extrutech FORM System Installation Instructions

**EXTREMELY IMPORTANT INFORMATION  
PLEASE READ ENTIRE PACKET!**

**Warranty Is Void If Panels Not Installed According to Instructions**

**Note: Must follow guidelines of ACI, American Concrete Institute 318.05 & 318.11**

**Extrutech FORM $\phi$  System**, (Item # P624) Stay in-place concrete form create a superior sanitary surface that is designed for durability and cleanliness, combining the strength of concrete and the easy to clean finish of Extrutech Poly-Board panels. To create a non-porous prefinished, precast, structural panel that reduces finishing and installation time of the construction project resulting in bright white, easy to clean, sanitary walls. Panels have a smooth, glossy interior surface that improves overall reflective lighting. Creates a great-looking, easy-to-clean wall; for corrosive or high-moisture areas while also maintaining a fresh clean appearance.

Extrutech FORM  $\phi$  - P624 Panels' bright white surface quickly sheds water; made with 100% virgin, exterior-grade PVC. Has a removable clear protective film that keeps the panels clean during construction. The 6" thick by 24" wide panels can be joined together to form any wall length and available in cut to the inch lengths, for up to 20 foot wall heights.

## 1. WARNINGS & SPECIAL NOTES

- 1.1 Keep panels 24" from Heaters and shield Radiant Tube Heaters
- 1.2 120 Degree Maximum heat exposure
- 1.3 Below 40 degree Installations

## 2. INSTALLATION IN COLD OR WARM WEATHER

- 2.1 Cold Temperatures - Below 40°F (4 C) Warm Panels to a minimum 60°F (16°C) overnight.
- 2.2 Warm Temperatures- above 70°F (21 C) Cool Panels to a minimum 60°F (16°C) overnight.

## 3. GENERAL NOTES - Panel Handling and Installation

- 3.1 Follow manufacturer's safety instructions
- 3.2 Delivery, Storage and Safe Handling
- 3.3 *Use of caulk on panel joints for high moisture and food process areas.*

## 4. PANEL CUTTING INSTRUCTIONS

- 4.1 Read and follow all Safety Instructions for power and hand tools.

## 5. PANEL LAYOUT & ASSEMBLY

- 5.1 Panel Description
- 5.2 Area Prep and General Panel Overview
- 5.3 Panel Sizes
- 5.4 Wall Openings
- 5.5. Installation and Bracing

## 6. POURING CONCRETE

## 7. RECOMMENDED FASTENERS & SUPPLIERS

Extrutech Plastics, Inc.

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**Note: Must follow guidelines of ACI, American Concrete Institute 318.05 & 318.11**


## 1. WARNINGS & SPECIAL INSTALLATION NOTES

**1.1**  Radiant Tube Heaters must be shielded and 24” clearance must be maintained between Extrutech products and the shielding of the Radiant Tube Heater. *Please do not install ceiling furnaces within 24” of our panels. If you install single unit heaters you must install additional ceiling fans to re-circulate the heat down away from the ceiling.*

**1.2**  The Extrutech FORM Panel and (all PVC) have a **heat distortion threshold of 120° degrees Fahrenheit**. Please discuss this with your HVAC contractor prior to installation.

*Extrutech Plastics recommends ceiling fans or blowers be installed with “Tube-Type Radiant Heaters” to move the air throughout your facility for uniform heat distribution.*

Our warranty does not cover distorted panels because of excessive heat due to improper installation and operation of heaters & furnaces in areas using our PVC panels. Please contact EPI if you have any questions about your project. Please read our 10-Year Warranty prior to installing your panels.

**1.3**  When installing in temperatures below 40°, follow cold weather installation methods (see section 2.1) When installing in temperatures above 70°, follow warm weather installation methods (see section 2.2) allow space for expansion in hot weather. (Also read Section 2)

## 2. RECOMMENDATIONS INSTALLATION FOR COLD OR WARM WEATHER


 **Extrutech Plastics, Inc. IS NOT responsible for expansion problems. The warranty on this product is null and void if not installed according to Extrutech installation methods.**

**2.1** Cold Temperatures - Below 40°F (4 C) Warm Panels to a minimum 60°F (16°C) overnight. Bring panels inside and warm to 60 degrees or warmer, if possible, overnight or tarp area over bracing and provide a monitored method of heating.

**2.2** Warm Temperatures- above 70°F (21 C) Cool Panels to a minimum 60°F (16°C) overnight.

## 3. GENERAL NOTES – Panel Installation

**3.1**  Read and follow all safety instructions

**3.2**  Upon delivery product should be inspected for damage and correct quantity. Any damage must be noted on the bill of lading/delivery receipt against the carrier and presented to Extrutech within 14 days of delivery of goods. Extrutech is not responsible for freight damage. In some cases a fork lift or other means may be required to offload materials. You must make arrangements to offload your order from the delivery truck; this service is not included and is not the responsibility of the truck driver. Extrutech Plastics, Inc. is not responsible and will not pay for off loading services.

**3.2.1** Products should be protected from extreme temperature and weather conditions from time of delivery to project completion. This includes removing product from truck or shipping container upon delivery and stored in a clean, dry, flat area indoors or area protected from extreme temperatures, in manufacturer’s unopened packaging until ready to be used.

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**3.2.2** On-Site handling, keep product secured by means of original banding or use of 2” wide cargo strapping, while moving around site and keep in manufacturer’s unopened packaging until ready to be use. **Product can slide off pallet if not secured.**


**3.3**  Use of clear caulk on to seal panel and trim joints.  
*Place a small bead (1/16”dia.) of clear silicone caulk the length of the joint along the inner edge of the female side of the panel just before panels are joined together followed by removal of excess with a non-marring putty knife follow by wiping and removal of extra caulk to make smooth neat appearance the length of the joint.* (See Details and Suppliers on section 7)

### **4. PANEL CUTTING INSTRUCTIONS – Panel and Trims can be cut by using these methods:**

**4.1**  **Read and follow all Safety Instructions for power and hand tools.**

- Wear safety glasses and ear protection.
- Cut through product slowly, don’t rush.
- Powered miter saw with fine tooth blade.
- Table saw with a 80 tooth carbide blade.
- Temperature is a factor when working with vinyl. Warm weather is no problem but cold temperatures can create some issues.

**5. PANEL LAYOUT & ASSEMBLY –** Door and window trim boards, trim board, and casings, etc., will be installed after panel installation.

**5.1 ALL PANELS** come with a clear protective film that protects both faces of the panel during pouring and installation.  "It is important to spray off the excess concrete off the plastic film while it is still wet, or it will harden and be more difficult to peel off the film. Shortly after the walls are poured the plastic protective skin should be removed, ideally within 5 days, If the concrete floor needs to be poured yet, then remove this protective skin down to about 4' from the floor and remove the final amount after the floor has been poured." Panels overall are 6” inch thick with a face thickness of .110”. Multiple interior legs the length of the panel and large parallel arrayed openings located along the thickness of the panel, allow for rebar placement (See panel details on placement) and concrete to flow. Panels are joined and locked together with a Double Spline’s, E-Locking System, that slide between two panels, from the top, down the length of the joint to create a smooth aligned transition between two panel faces.

**5.2 PREP AND LAYOUT -** Work and Form area should be swept clean and clear of dirt and debris prior to layout of panels and bracing. Panel face with clear film should be inspected and wiped clean of dirt or debris. Form Area should be flat and smooth and panels should be installed in accordance with industry standards per project requirements. Panels are set in place using safe lifting methods and joined together to form wall assemblies and braced as determined by project design requirements. (See panel details).

**5.3 PANEL SIZES** are six inches thick and two foot wide, come pre-cut to length ordered up to 20’ foot lengths. For varying wall widths, one or two panels per wall are factory made to required widths, as determined during the quoting process, to the size required to provide the correct overall wall width.

**5.4 WALL OPENINGS –** Smaller openings and mechanical chases can be cut in the FORM Panels to create the required openings using finer tooth carbon blades with standard power saw, or hole saw on the face of the panel. For larger openings panels are laid out during the quoting process to provide best appearance and structure, with panels and trims provided as required.( See panel details and project details for special bracing of openings ).Before concrete is poured finished panels are installed on site.

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After the openings are added and rebar set, concrete is poured in multiple passes each to a maximum height of three feet per pass. Concrete vibrators are use to aid even fill of all form areas.

**INSTALLATON & BRACING** of FORM Panels is done using industry standard construction methods with all safety requirements enforced. Wear safety harness, Hard Hats, Safety Glasses and ear protection. In a manner that panels are set plum, level, square and true to building standards. Panels can be set on footings or finished floor areas approved for its use, once the design and layout is approved.

## 5.5 INSTALLATON & BRACING

**5.5-1 Check location** is level and clean. Provide enough work area for material, bracing and equipment. Review panel layout specific to the wall being worked on, panels are numbered for each wall, with a tag calling out the bottom and location of each panel. Note the panel numbers are to face to the inside of room as called out by the panel layout drawing. Locate all required panels, splines, required trim and stage them close to the work area, allowing room for bracing and equipment as needed.

**5.5-2 Layout panel lines** by locating the wall center line, beginning and ending locations. Snap center lines and outside panel lines 3” apart from the center line 6” overall. Check that lines are square and parallel as needed for the layout. Along the center line locate and install rebar as required by the project design of the proper size, length and to the required depth (See Panel Details). On the two outside panel lines install the footers (2x4’s) fastened to the footing; with removable concrete screws at a max. of two foot on center, each to a depth as called out by screw manufacturer.



(Fig 5.5-2)

**5.5-3 Locate and set the first panel** or panel & corner as required per the design for the area you will be starting from; note that the correct end of the panel is started with either, male, female or plan edge face.



(Fig 5.5-3)

**5.5-4 At the top of the panels** you are starting with, set 2x4’s to three sides flush with top of the first panel fastened together at ends and over top of the panels with two 1” x 13” 12ga strapping each fastened together with four 1/4” x 1 1/2” Hex Head Lag Screws to the two 2x4’s at each side of the panel. Set the panel in place between the footer 2x4’s. Next set vertical 2x6’s with bracing attached at top end to **three sides of the panels** and secure to top and footer 2x4s. Adjusting the bracing as required till the panel is plum and solid in two directions. (see Fig 5.5-9)



**5.5-5 Joints and Sealants**, If required, panel joints can be filled during panel installation by placing a bead of clear (food grade) silicone caulk along the inner edge of the female side of the panel just before panels are joined together. Let silicone set to a fine film develops and remove excess with a non-marring putty knife.



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## INSTALLATION & BRACING

**5.5-6 Set the next numbered panel**, between the footer 2x4s setting the bottom, [Note Panel tag is to be at the bottom facing inward], into the installed panel and tipping the top into place and drawing them together with the use of rubber mallets and wooded striking block held against the end of the panel and use (Quick Clamp) bar clamps at the top front and back of each panel joint to pull panels together. (see Fig 5.5-5)



(Fig 5.5-6)

**5.5-7 Install required rebar** in both the vertical and horizontal direction in the first panels and continue to install vertical and horizontal rebar with each set of additional panels. (See Panel Details & Project Notes)

**⚠ MUST INSTALL TWO SPLINES AT EACH JOINT**

**5.5-8 Install Two Splines at each joint** (provided; each the length of panels) from the top down, full height of each panel, insert **two** 1/4" x 3/4" Spline's down the front and back of each joint. (See Panel Details)

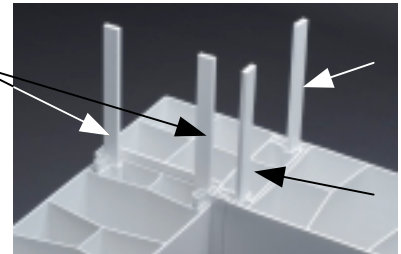


Fig 5.5-8)

**⚠ Important check** that two Splines are installed at each joint on all the panels before pouring concrete.

**5.5-8.1 Continue** to set next panels, inserting Splines at each joint and adding bracing footer and 2x4's along the top. Vertical Tee 2x4's bracing every 6' to 12' feet, and horizontal bracing every 4' feet as determined by the design, height of the wall and located to each side of wall openings. (See Panel Details & Project Notes)



(Fig 5.5-9)

**5.5-9 Install bracing** to all four sides of the wall panels, (See Panel Details) checking that all panels are plum and the wall is straight. Install window bracing after first pass of concrete pour to better fill wall area under windows.

**⚠ Check Bracing** before pouring concrete that the wall is straight and plum adjusting as required. Check that all bracing is solid, at proper spacing and properly attached at the top and properly staked at the bottom with stakes of proper size, length and anchor depth for type of soil and conditions.

**6.0 Pouring Concrete**, use a pea gravel 4000 psi concrete with a slump of 4-5, use a cold weather mixture with a plastizer when below 35 degrees and a mixture suitable for climate and time of year as called out in project design. Pour concrete in a steady even manner the length of the wall, making multiple passes, pouring to a maximum of 3 feet high per pass, aided by a person lightly pounding on the walls with a rubber mallet to determine the height of the concrete in the wall. Use concrete vibrators to lightly vibrate the concrete, aiding the flow in tight areas around penetrations, framework and portals. Provide a dry, even temperature of panels and concrete during pour and setting time. During cold temperatures keep fresh concrete from freezing in the FORM panels by providing insulated coverings. **⚠ "It is important to spray off the excess concrete off the plastic film while it is still wet, or it will harden and be more difficult to peel off the film.** **⚠ Shortly after walls are poured the plastic protective skin should be removed, ideally within 5 days. If the concrete floor needs to be poured yet, then remove this protective skin down to about 4' from the floor and remove the final amount after the floor has been poured."**



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**Before removing bracing** Allow concrete to set and hardened completely, that the wall is properly braced and structurally supported during construction and completion of project. Follow ACI Guidelines and all safety requirements, Wear Safety Harness, Hard Hat, Safety Glasses and Ear Protection.

## 7. RECOMMENDED FASTENERS AND SUPPLIERS:

### FASTENERS:

Supplier: **FASTENAL** [www.fastenal.com](http://www.fastenal.com) - (as required for trims per project specifications)

Applications: - Please read and follow fastener's preparation and installation instructions.

**Part No.**                      **Description**

Use with **Masonry** applications

**Tapcon®** 1/4" Dia. x 3" Long Hex Head Screw.

### SEALANTS - Sealant for waterproofing

Dymonic FC waterproofing sealant

**Supplier:** Tremco® [www.tremcosealants.com](http://www.tremcosealants.com)

Purchase through local Building Supply Dealer

**Description:**

High-Performance, Fast Curing, flexible, for precast concrete joints, perimeter caulking,

Use on joints per Tremco® instructions

Silicone Caulk - (for panel and trim joints)

**Supplier:** DAP [www.dap.com](http://www.dap.com) Silicone Rubber Sealant, Caulk

Purchase through local Building Supply Center

**Description:**

Clear 100% Silicone Rubber Sealant, Caulk - Use on joints per instructions

### ADHESIVE - PL400® or Liquid Nails® - (Use As panel & trim Adhesive )

**Supplier:** Loctite PL400. [www.loctiteproducts.com](http://www.loctiteproducts.com)

Purchase through local Building Supply Center

**Part No.**

**Description** PL400® Heavy Duty Construction Adhesive, Caulk.

LIQUID NAILS® Adhesives

Purchase through local Building Supply Center or FASTENAL

**Supplier:** FASTENAL [www.fastenal.com](http://www.fastenal.com)

**Part No.**                      **Description** Use as Panel & Trim Adhesive

63902                          10.5 oz. LN602-Liquid Nails® for Subfloors and Decks

63903                          29 oz. LN602-Liquid Nails® for Subfloors and Decks

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